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Early Warning and Crop Condition Assessment

A Joint Program for
Agriculture and
Resources Inventory
Surveys Through
Aerospace
Remote Sensing

September 1980

81-10101

PATCH IMAGE PROCESSOR USER'S MANUAL

NASA CR-

160930

M. J. Nieves

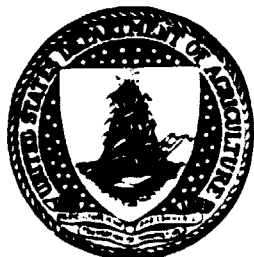
(E81-10101) PATCH IMAGE PROCESSOR USER'S
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16. Abstract The Patch Image Processor extracts patches in various size (32x32, 64x64, 128x128, and 256x256 pixels) from full-frame Landsat imagery data. With the patches that are extracted, a patch image mosaic is created in the image processing system, IMDACS, format					
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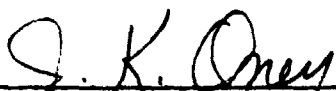
PATCH IMAGE PROCESSOR
USER'S MANUAL

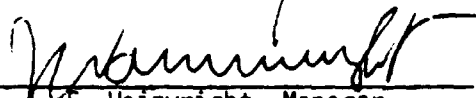
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LOCKHEED ENGINEERING AND MANAGEMENT SERVICES COMPANY, INC.

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For

Earth Observations Division
Space and Life Sciences Directorate
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS

September 1980

1. GENERAL INFORMATION

1.1 SYSTEM NAME

Patch Image Processor, PATCH

1.2 PRIMARY USER

Early Warning Crop Condition Assessment project personnel.

1.3 DEVELOPING ORGANIZATION

Lockheed Engineering and Management Services Company, Inc.
M. J. Nieves

1.4 COMPUTER FACILITY DESCRIPTION

The PATCH Image Processor runs on a PDP 11/70 computer under the IAS operating system. It is implemented in the USDA/FAS computer facility in Houston, Texas.

1.5 REFERENCES

DEC-11-LMFUA-B-D Fortran IV Users Guide;
DEC-11-LFSMA-A-D RSX-11D Fortran Special Subroutines Reference Manual;
Integrated Multivariate Data Analysis and Classification System (IMDACS)
USDA-ATS Program Documentation, Vol. II.

2. DESCRIPTION

2.1 PURPOSE

The purpose of the PATCH Image Processor is to extract patches, in various sizes, from full frame Landsat imagery data. With the patches that are extracted, a patch image mosaic is created in the IMDACS processing system format.

2.2 USAGE

The PATCH Image Processor is set up to run in a batch mode. The input will be one or more foreign generated tape files.

3. INPUT

3.1 TYPES OF INPUT

3.1.1 TAPE

Landsat-formatted tape files, foreign, with no record exceeding 4000 bytes.

3.1.2 DISK

A parameter file provides the processor with parameter values for the construction of the patch image. The parameter values are as follows:

Each parameter value is explained within the file, and the corresponding value must be right justified starting with the space adjacent to the = sign. Precede the value with blanks or zeros if the number of digits composing the value is smaller than the field. See figure 1.

NOMINAL LATITUDE = ####
NOMINAL LONGITUDE = ####
VERSION NUM = ###
FILE NAME = AAAAAA
PATCH SIZE = ###
LINE INCREMENT = ####
INITIAL START LINE = ####
PIXEL INCREMENT = ####
INITIAL START PIXEL = ####

FIGURE #1

RPARAM DAT PARAMETER Format

NOMINAL LATITUDE:	A four digit integer which is the latitude offset of the full frame center point (not used).
NOMINAL LONGITUDE:	A four digit integer which is the longitude offset of the full frame center point (not used).
VERSION NUM:	A three digit integer (not used, set to 1).
FILE NAME:	Six alphanumeric characters used for naming the image and header files which are created in the IMDACS processing system format.

PATCH SIZE: A three digit integer which defines the size of the patches desired. (Limited to 32 x 32, 62 x 64, 128 x 128, 25 x 256 pixels.)

LINE INCREMENT: A four digit integer value used for extraction of the patches from the full frame data. It represents the number of lines that are skipped between patch rows.

INITIAL START LINE: A four digit integer that defines the starting line within the full frame from which data is to be extracted.

PIXEL INCREMENT: A four digit integer value used for extraction of the patch data from the full frame data. It defines the number of pixels to be skipped between patch columns.

INITIAL START PIXEL: A four digit integer defining the starting pixel within the starting line from which data is to be extracted.

3.1.3 CARDS

The processor requires the following system control cards. See Figure 2 for example.

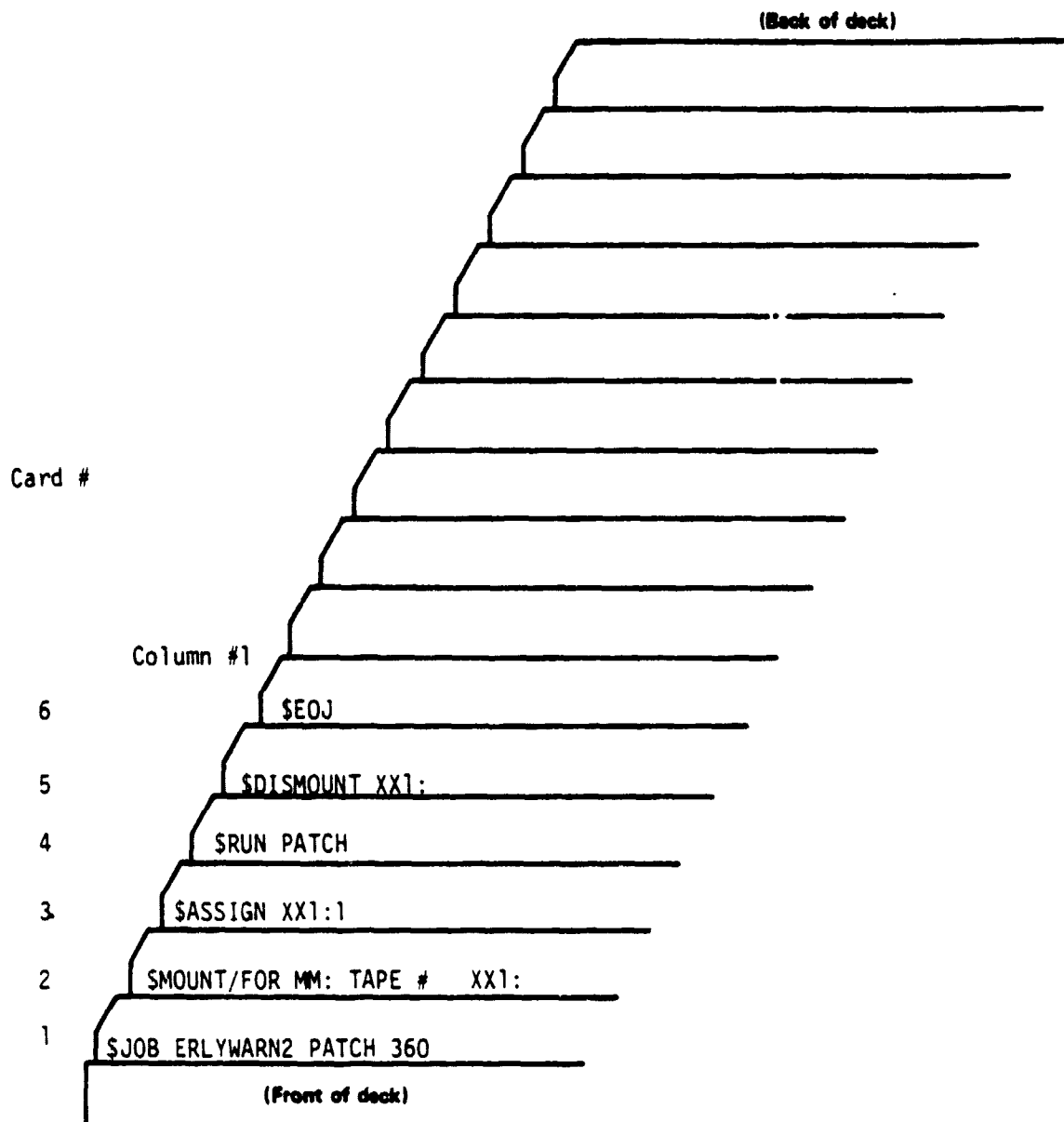


FIGURE 2
SAMPLE DECK SETUP

4. PROCESSING

4.1 INTERACTIVE

Not applicable.

4.2 BATCH

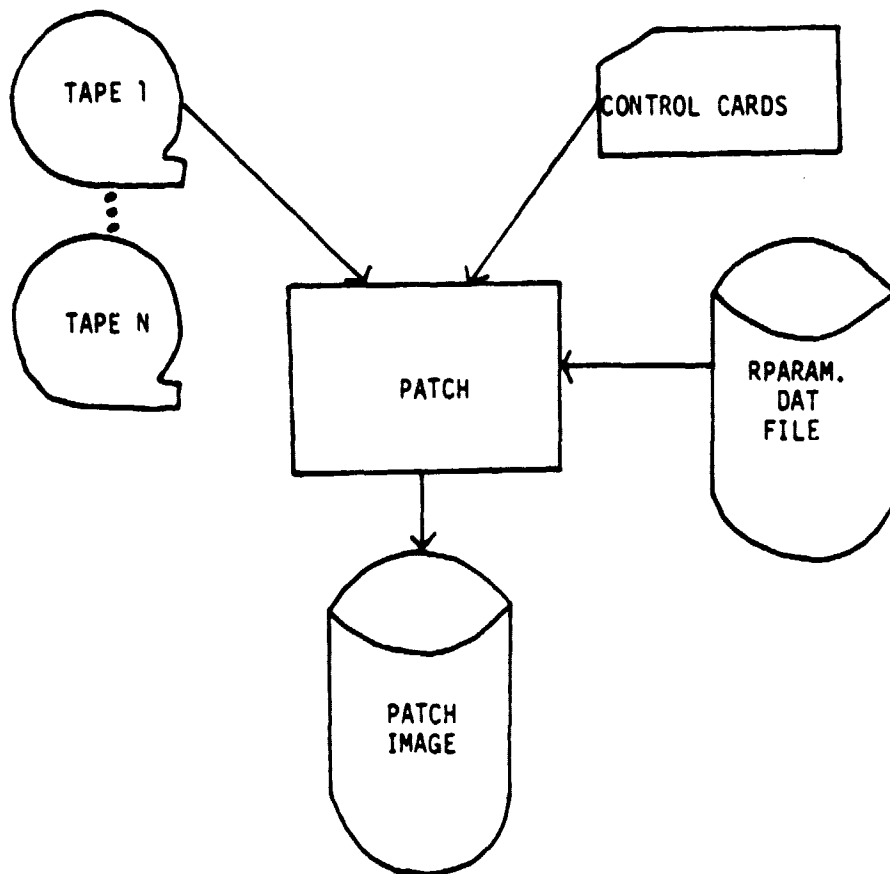
The user must submit the deck of cards as described above in section 3.1.3 with a batch job request form. The request form should state the following:

BATCH JOB REQUEST	NAME: Michael J. Nieves	DATE SUBMITTED 8/7/80
REQUEST INSTRUCTIONS: Please mount tape "Tape 1" and run batch job. When the end of tape is reached, the tape will rewind and the following message will be given: ***** *REPLACE MOUNTED TAPE WITH NEXT TAPE IN SEQUENCE ***** Replace the mounted tape with "Tape 2" on the <u>same</u> tape drive.		
COMPLETION DATE	OPERATOR	

PASRS-104 (1-79)

NASA-JSC

4.3 PROCESSING FLOW



5. OUTPUT

5.1 TYPES OF OUTPUT

5.1.1 TAPE

Not applicable.

5.1.2 DISK

A patch image header and data file in IMDACS format. Each record in the data file does not exceed 4000 bytes and each record in the header file does not exceed 3072 bytes.

5.1.3 LINE PRINTER

No printer output unless a tape error is encountered and the job is aborted.

6. SPECIAL INSTRUCTIONS OR RESTRICTIONS

The user may choose patch sizes 32 x 32, 64 x 64, 128 x 128, or 256 x 256 ; any other size will be rejected. A size must be specified in the RPARAM.DAT file. The following must also be specified in the RPARAM.DAT file:

Start pixel location, start line location, pixel increment, line increment, and the file name to be assigned to the new patch image .IMH and .IMD files. In order to sample as much of the full frame as possible, the pixel increment and line increment should be adjusted for the different patch sizes.

**EARLY WARNING AND CROP
CONDITION ASSESSMENT**

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December 1, 1980

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